

Application No.: 09/316549

Docket No.: PAS-093RCE

REMARKS

Upon entry of this paper, claims 1-14, 16-19 and 21-31 are pending.

Claim Rejections Pursuant to 35 U.S.C. §112, Paragraph 1

Pending claims 1-14, 16-19 and 21-31 were rejected under 35 U.S.C. §112, Paragraph 1, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention. These rejections are respectfully traversed in view of the following comments.

Summary of the Claimed Invention

The present invention addresses the limitations of conventional CAD (Computer Aided Design) systems by integrating analyses into the models of products as features. In particular, the present invention captures an analysis (such as an engineering analysis) inside a feature to generate reproducible referenceable parameters and/or geometric entities that describe the results of the analysis. An analysis is represented as a feature that is part of a model of a product. Because the analysis is integrated into the feature-based model, when a change in the model that requires updating of the analysis occurs, the analysis is automatically updated and the associated feature is updated. A new type of feature is defined to represent the analysis. This feature serves as a placeholder for the analysis.

Summary of Claim Amendments

Applicants have amended claim 1, 14, 19, 23 and 31 to indicate that the feature containing the analysis is updated automatically without user intervention following a re-computation of the analysis that occurs in response to a change in the model of the object. Applicants have also corrected an antecedent basis issue resulting from a typographical error in claim 7.

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Argument

The Examiner's attention is respectfully directed to the Behavior Modeling Task Guide included with the Pro/Engineer 2000i² release (a later release from Applicants' Assignee), pages iii to 1-4 submitted herewith as Appendix A. The Behavior Modeling Task Guide for the 2000i² release discusses the features claimed by Applicant in the pending application (from the earlier Pro/Engineer 2000i release), specifically the integration of an analysis into a feature of the model, and the motivation for the development of that feature. The Behavior Modeling Task Guide states the motivation for the analysis feature (at 1-1): "In traditional design systems, you need to manually iterate the geometry of the designs. You hope to get close to your objective, but you are not always able to identify solutions. Instead of settling on a design estimate that is "close enough," now you can explore optimal solutions with a complete understanding of the performance and behavior of the design." The Behavior Modeling Task guide additionally states (also on page 1-1): "Behavior Modeling, introduced in Pro/Engineer 2000i, gives you the tools you need to design product models that are driven by your requirements and specifications [emphasis added]." The Behavior Modeling Task Guide then indicates that "This new way of identifying solutions with Behavioral Modeling is achieved through the use of analysis features [emphasis added].

The analysis features of Applicants invention are described on page 1-2 of the Behavior Modeling Task Guide as a new type of Pro/Engineer datum feature. The description on page 1-2 states in part that "The analysis feature may contain a regular Pro/Engineer analysis, a user-defined analysis, or a feature relation," and that "The analysis feature and any dependent features update automatically when changes are made in the design." In contrast, the Examiner's attention is also respectfully directed to the Part Modeling User's Guide for Pro/Engineer release 20.0 (a previous release) which discusses the use of datum features in depth, but does not discuss the use of the analysis features claimed in the present application as those features were not included in that release. The Part Modeling User's Guide for release 20.0 may be found in the material previously submitted to the Patent Office on November 21, 2003 in CD-ROM form(d:\proe20\usascii\proe\part).

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Applicants respectfully submit that the Examiner's rejections of claims 1-14, 16-19 and 21-31 under 35 U.S.C. §112 are not well-founded and should be withdrawn. As noted previously, Applicants' description focused on the novel aspects of Applicants' invention, specifically the integration of the analysis into the model, rather than parametric modeling in general. The material from the Behavior Modeling Task Guide from the Pro/Engineer 2000i² release (attached hereto as Appendix A) makes clear that the integration of an analysis feature was a new element in the Pro/Engineer 2000i release and that the analysis feature was a new type of the well-understood modeling feature with which those skilled in the art were already extremely familiar. The general concepts of models, features and analysis were also well known in other CAD systems. The widespread use and familiarity with the predecessor versions of Pro/Engineer by the CAD community (and the CAD community's familiarity with the general concepts of features, models and analysis in other CAD systems), combined with the description of the analysis feature in the Application, strongly indicates that there was an adequate written description in the disclosure regarding the claimed features and an adequate demonstration of the possession of the invention by Applicants at the time of filing.

The CAD community was familiar with the previous versions of Pro/Engineer and other CAD systems which include many of the prior art elements listed by the Examiner in paragraphs 4 and 7 of the Office Action of September 20, 2004 (regarding the general concepts of model, features and analysis). Applicants' application focused, as it was entitled to do given the then-existing knowledge of those skilled in the art, on the use those well understood elements (model, features and analysis) in combination with the new analysis feature integrated into the model described in Applicants' invention. The description of Applicants' invention would have enabled those of ordinary skill in the art to make or use the invention without undue experimentation. Accordingly, Applicants respectfully request the withdrawal of all of the 35 U.S.C. §112 rejections and the allowance of the claims.

Applicants' attorney also wishes to express his regret for any unintended affront the Examiner may have taken from comments included in the last Office Action response. In the section cited by the Examiner, Applicants' attorney was attempting to criticize a position of the Examiner and not the Examiner himself and regrets any comments that could be interpreted as

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directed to the Examiner as an individual rather than expressing a disagreement with the Examiner's positions.

Applicants also respectfully suggest that the discussion of incorporation by reference in the current Office Action is misplaced as a) Applicants' specification does not require incorporation by reference as it properly supports the claims and adequately meets the written description requirements as set forth above; b) Applicants did not attempt to incorporate by reference but merely listed an exemplary CAD system in which the claimed invention could be practiced; and c) the Examiner has previously indicated his awareness that the Applicants did not attempt to incorporate by reference.

Applicants further respectfully suggest that the Examiner's request for source code in order to understand what constituted the invention at the time of filing (paragraph 9 of Office Action) is now mooted by the submission of the additional material explaining the analysis feature, submitted herewith as Appendix A, when considered in light of the above discussion.

Claim Rejections Pursuant to 35 U.S.C. §112, Paragraph 2

Applicants respectfully request reconsideration of the rejections directed to pending claims 7 and 18. Claims 7 and 18 were rejected under 35 U.S.C. §112, Paragraph 2, as being indefinite in that they fail to point out what is included or excluded by the claim language. Claims 7 and 18 indicate that the analysis is performed by an external program to the CAD system/package prior to the analysis being incorporated/added as a feature in the model. Claim 18 is dependent indirectly on claim 14 which includes the step of "incorporating an analysis that is applied to the parametric feature-based model to produce results into a feature of the parametric feature-based model." It follows therefore the external program must be a program capable of performing an analysis that can be incorporated into a feature. The limitations identify the claim elements of claim 18 sufficiently for 35 U.S.C. §112, Paragraph 2 purposes. Similarly, claim 7 is dependent upon claim 1 which includes the steps of "creating at least one feature in the model that contains the analysis;" and "adding the feature to the model of the object." Applicants respectfully submit that claims requiring external programs to possess the noted limitations are sufficiently described pursuant to 35 U.S.C. §112, Paragraph 2.

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Accordingly, Applicants request the withdrawal of the rejections and the allowance of the claims.

Provisional Double Patenting Rejection

Applicants have executed a terminal disclaimer, submitted herewith, with regard to claims 1, 7, 14, 18-19, 23, 27, 30-31 as they relate to commonly owned co-pending United States Application No. 09/318, 105.

Claim Rejections Pursuant to 35 U.S.C. §102(b)

The Examiner rejected claims 1-14, 16-19 and 21-31 pursuant to 35 U.S.C. 102(b) as being anticipated by Sebastian (U.S. Patent No. 5,552, 995), and Pro/Engineer Release 19. The Applicants respectfully traverse each of these rejections for the reasons stated below

Summary of Sebastian

Sebastian discusses a concurrent engineering design system which attempts to concurrently design parts, tools for making a part and the processes used to make the part. Feature templates are used to hold the information for the part design, tool design and process steps. The templates may be implemented using an object-oriented language. The feature templates include sub-templates such that changes in one module can affect changes in other modules.

Summary of Pro/Engineer Release 19

Pro/Engineer Release 19 (hereafter "Release 19") is a previous release of a commercial CAD product from Parametric Technology Corporation (the Assignee of Applicants' invention). Release 19 discusses the use of a parametric CAD system including the use of features in a model. It does not discuss the use of the analysis features that are claimed in the present invention, which did not debut until the Pro/Engineer 2000i release as noted in the material attached as Appendix A.

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As set forth in MPEP § 2131, “[a] claim is anticipated [under 102(b)]only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” The Applicants respectfully submit that, under this standard, none of the references describe every element of the independent claims, and therefore they also do not disclose all of the elements of the claims dependent thereon. Claims 1, 9, 14, 19, 23, 27, 30 and 31 are independent. Applicants have amended claims 1, 14, 19, 23 and 31 as set forth above to indicate that the feature containing the analysis is updated automatically without user intervention following a re-computation of the analysis that occurs in response to a change in the model of the object. Claims 9 and 27 include the step of creating an analysis feature in the model based on the analysis and the results of a performed analysis. Claim 30 includes the steps of “performing an analysis on at least a portion of the model to yield results” and “representing the results as one or more selected features in the model.”

Sebastian describes a concurrent engineering system. The feature template in Sebastian includes part information, process information and tool information. The template may include functions allowing templates to access other information in the template or other templates. However, the template of Sebastian does not disclose the incorporation of an analysis into a feature that is updated automatically without user intervention following a re-computation of the analysis that occurs in response to a change in the model of the object. The system of Sebastian discusses a user driven process, not the process claimed by Applicants in the amended claims. The sections cited by the Examiner do not show an analysis integrated into the model that updates automatically in response to a change in the model and a subsequent re-computation of the analysis. Accordingly, Applicants respectfully request the removal of the rejections of claims 1-14, 16-19 and 21-31based on Release 19.

Regarding Release 19, the product literature from the Assignee of Applicant's invention makes clear that the analysis feature that Applicant is attempting to claim debuted in a later release, Pro/Engineer 2000i (See Appendix A). It follows that if it debuted in the later release it was not present in the earlier release. Accordingly, Applicants respectfully request the removal of the rejections of claims 1-14, 16-19 and 21-31based on Release 19.

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CONCLUSION

In view of the above Amendment, applicant believes the pending application is in condition for allowance.

Applicant believes no fee is due for the Amendment. However, Applicants have also executed a terminal disclaimer that is submitted herewith. Please charge our Deposit Account No. 12-0080 the fee of \$130.00 for the terminal disclaimer under Order No. PAS-093RCE from which the undersigned is authorized to draw. Please also charge the Deposit Account for any other fees that may be due.

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Respectfully submitted,

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